

to the extreme

For Danish-based producer Kroll Cranes, don't even mention "heavy-duty tower cranes", unless, that is, you are talking about units with lift capacities of 800 tonne/metres or more. Anything, below that is simply standard according to firm. Kroll is also the only crane manufacturer in the world that has actually produced tower cranes in excess of 3,200 tonne/metres, topping the efforts of Liebherr and Potain, which have both so far not found it necessary to pass 3,000-tonne/metre units.



Kroll K-10000

Kroll's own portfolio reaches its climax with what is actually the biggest tower crane on the face of the earth, the truly massive 10,000 tonne/metre, K-10000 with a lift capacity of 240 tonnes at a 44-metre radius. Since 1978, Kroll has produced a total of 15, K-10000s, 13 of which were originally commissioned to serve the demand the construction of nuclear power units in the former Soviet Union – the remaining two units were put to work in the US.

Today, most of the 13 units K-10000s are working at various sites including shipyards in Iran, Singapore and Norway, and two units, which are currently on their way to a shipyard in South Korea. More recent deliveries during the past two years include a 3,000 tonne/metre K-3000, a 4,000 tonne/metre K-4000 and two 5,000 tonne/metre K-5000s to the Daewoo Shipyard, also in South Korea. Over the past 20 years, the Daewoo site has also taken delivery of a further two K-5000s, one K-4000, a further K-3000, seven 1,800 tonne/metre K-1800s and 10 smaller K-320 units.

Last year saw the delivery of four K-320 units for the construction of the Bangkok Industrial Ring Road. "The final height will be approximately 180 metres," says Niels Sorensen at Kroll. "Although we don't consider the K-320 to be a heavy-duty crane, the project is interesting because of the height and because of the long distance between the crane mast ties to the structure's pylons, which will be up 23 metres apart. "The dismantling of the cranes will be another interesting issue," says Mr Sorensen. "This has lead to a re-design of the crane's counter jib, including an additional hook and trolley system."

The company is currently in negotiations for the delivery of a further K-3000 unit.



A Kroll K-320 at work on the Bangkok Industrial Ring Road.



Potain goes to (China) town

On completion, the Nanjing Bridge number 3 spanning the Yangste River in Nanjing, China, will be one of the world's longest. But not only will it be a benchmark in the world of bridge building, but also in the world of lifting – at least for France-based tower crane producer, Potain.

Earlier in the year, the company, parented by the Manitowoc Crane Group, accepted a multi-million dollar order from Nanjing No 3 Yangste Bridge Company for the production of several giant tower cranes to assist in the bridge's construction. Those cranes turned out to be the two largest ever produced by Potain.

Dubbed MD 3600, each of the enormous cranes, which have since been shipped to the site and put to work, are rated at a maximum lift capacity of a massive 160 tonnes, which can be lifted out to a radius of 18.7 metres. Both units have been rigged with a 40-metre jib for the project and are working at heights of up to 200 metres.

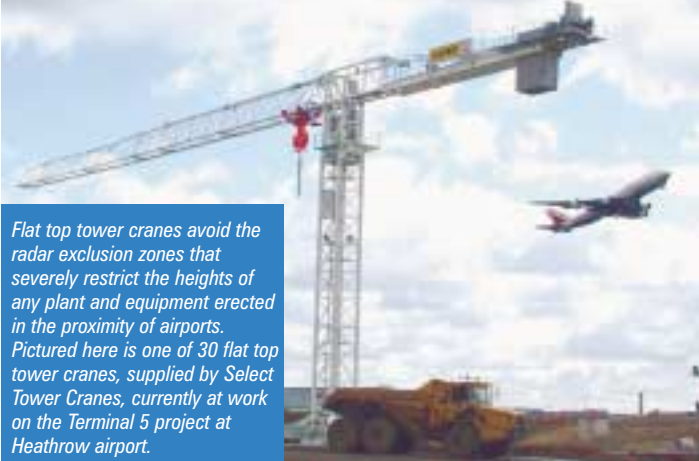
The units are based on what was previously Potain's flagship unit, the MD 2200, and, as with their predecessor, are mounted on Potain's tubular R-mast as opposed to the traditional lattice K-mast.

Two MD 2200 units are currently at work on the £13.5 million Three Gorges Dam project, also on the Yangste River.

The world's largest tower cranes

Manufacturer	Model	Capacity
Kroll	K-10000	240 tonnes at 44 metres
Potain	MD 3600	160 tonnes at 18.7 metres
Kroll	K-5000	120 tonnes at 39.1 metres
Kroll	K-4000	120 tonnes at 33.3 metres

top selection



Flat top tower cranes avoid the radar exclusion zones that severely restrict the heights of any plant and equipment erected in the proximity of airports. Pictured here is one of 30 flat top tower cranes, supplied by Select Tower Cranes, currently at work on the Terminal 5 project at Heathrow airport.

Growing market interest in the flat-top tower crane has warranted the focus of Italy-based Gru Comedil this year, which extended its range with the introduction of the CTT 91. Among the advantages of the flat top model over other crane types highlighted by Marco Zucchet, area manager at Terex Comedil, is the commonplace lack of a tower head and tie-bars, and quick and safe erection procedures.

"Erection of the slewing units of our lower capacity cranes ranging, from the CTT 121 to the CTT 181, requires just two easy operations, four required for the larger CTT 51 to the CTT 91, while the central jib section of the trolley winch with ropes, hoist winch and electrical box is pre-assembled. Limited and modular components across the

entire range is also an advantage in view of spare parts service and hire contractors.

"The reduction of at least two tower elements [tower head and tie-bars] is also advantageous on sites where several cranes could potentially interfere with one another," says Mr Zucchet.

"The cranes require less air space, while the possibility of reduced jib ranges up to 20 metres means they are ideal for use on airport job sites."

Comedil will also be extending its luffing jib offerings in the coming months with the launch of a new mid-range program allowing lift heights of up to 72 metres.

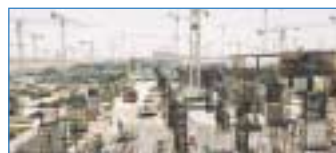
The range will be frequency controlled, which the company says allows for a smoother operation, reduced noise levels and a lower power requirement.

Currently on hire from UK-based tower crane rental company, Select Tower Cranes, are a total of 30, 630 metre/tonnes Comedil flat top units for the new Terminal 5 project at London's Heathrow airport. Topping that, Select has also supplied a fleet of 50 Comedil flat top units, ranging from 300 to 600 metre/tonnes capacity, to assist in the construction of a new terminal at Dubai airport.

"The flat top tower cranes are ideally suited for this type of work as they avoid the radar exclusion zones that severely restrict the heights of any plant and equipment erected in the proximity of the airport," says Mike Taylor, national sales manager for Select Tower Cranes. "At Terminal 5, Heathrow, the 630 metre/tonnes capacity units are erected with jib lengths up to 85 metres."

To cope with demand, Select recently invested in a further 40 tower cranes, taking the company's fleet to in excess of 330 units with

a further 40 expected to be added by the end of the year. As well as flat top units the fleet also comprises numerous saddle and luffing jib models that are proving equally as popular across UK job sites as the flat top models. Other contracts involving Select saddle and luffing jib units currently running, or about to start, include the supply of nine cranes to the St Pancras redevelopment project, six cranes each to the Royal Bank of Scotland and the development of Ascot racecourse, and two large luffing jib units to Wembley Station. A further 22 units will soon be making their way to the Paradise Street project in Liverpool.



Arguably one of the world's largest construction projects in terms of tower crane numbers at present, the Dubai airport development site is currently home to an army of 50 flat top units.

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Opting for German-made luffing jib tower cranes this time around is another of the UK's growing tower crane hirers, W D Bennet's Plant, which recently added five new heavy-duty Liebherr luffing units to its fleet. The company opted for four, 16-tonne capacity 160HC-Ls and a bigger 24-tonne capacity 224HC-L.

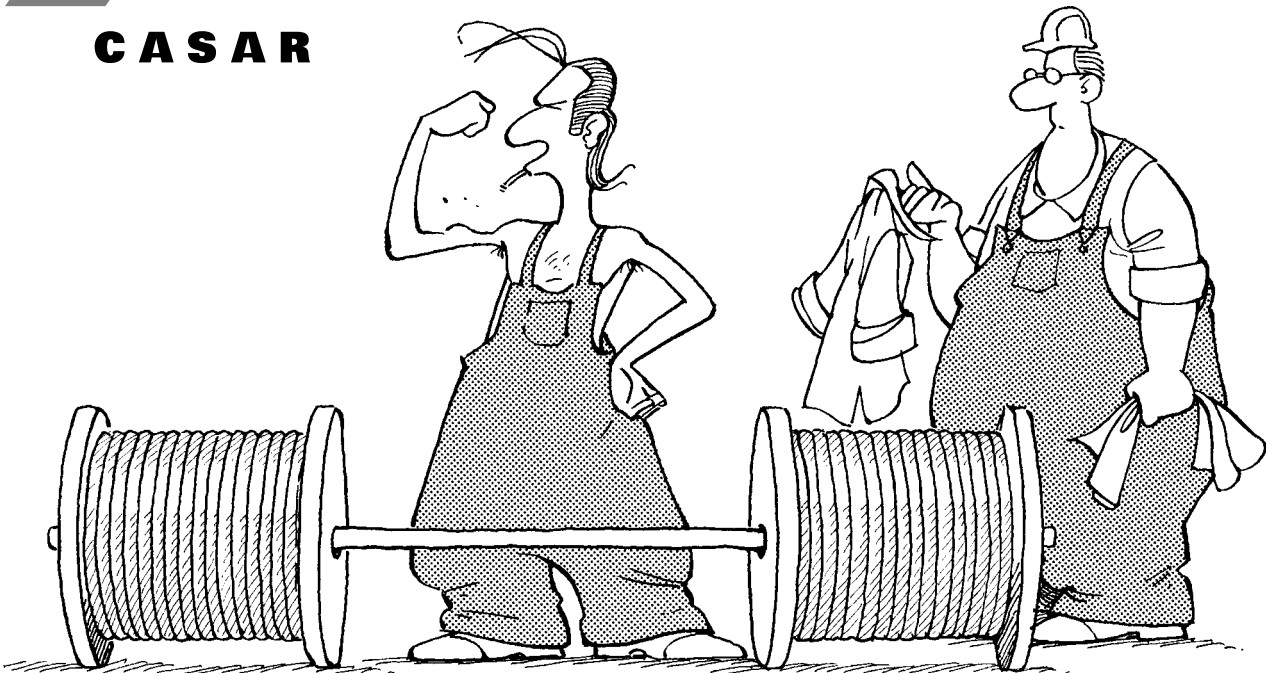
"The bigger 160 HC-Ls are equipped with full PLC control and frequency drive motors and are capable of free-standing tower heights of 82 metres and a 2-tonne capacity at a jib length of up to 55 metres," explains Dermot O'Neill, Liebherr sales and after service manager UK and Ireland. "The bigger 224HC-L has a lower free-standing height of 70 metres, but provides a 2.3-tonne capacity with a 60-metre jib

and a greater overall capacity." Further deliveries of the 160HC-L to the UK by Liebherr also include those to Kier Plant, which also recently took on board a 6 tonne capacity 154EC-H6 saddle jib, capable of lifting 1.65 tonne at a maximum radius of 60 metres.

Earlier in the year, Liebherr topped its EC-H series with the launch of its 630 EC-H 40 Litronic top-slewing unit at bauma 2004, which also claimed first prize for the largest crane on display at the show. A 40 tonne capacity unit, the 630 has an under hook height of 80 metres and a working radius to match. The first unit was destined for German soil and snapped up by Nagel-Baumaschinen on the third day of the show. The UK is yet to be tempted.



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